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gas volume to standard conditions applied to the estimation of urea in urine by the hypobromite method. "The Relation of Different Acids to the Precipitation of Casein and the Solubility of Cheese Curds in Salt Solutions," by J. L. Sammis and E. B. Hart. The amount of  $N/10$  acid required to precipitate casein from a lime-water solution varies with the temperature, kind of acid and age of solution. The solubility of cheese curds in salt solution depends upon the kind of salt and the concentration. It is influenced by contact with acids. "An Endeavor to Account for the Transfer of Proteid in Inanition," by Albert Woelfel. An attempt to explain why some tissues waste more than others during inanition by comparison of autolytic and heterolytic digestions. Results negative. "Proceedings of the American Society of Biological Chemists," in session in Baltimore, December 28-31, 1908.

*The Museums Journal* of Great Britain for March describes "A Method of Mounting Eggs," by Raymond Bennett, in use in the Ipswich Museum; and Mrs. Roesler tells of "The Work of an Instructor in the American Museum of Natural History," whose work lay especially with children and teachers. There is a note on a "Conference on Indian Museums" at which eleven governments or states were represented and a variety of topics discussed.

*The Zoological Society Bulletin* for April is an Aquarium Number, devoted to things aquatic. It contains a description of "The Bermuda Aquarium," tells of "Frogs and Frog Raising," of the "Water-throwing Habit of Fishes in the New York Aquarium," of "The Solution of the Carp Problem" and "Angling and Water Pollution." Finally there is "A Photographic Study of the Ghost Crab."

*The Museum News*, of the Brooklyn Institute, is mainly devoted to a "Guide to the Exhibits Illustrating Evolution and the Preservation of Animals" and a "Guide to the Trees and Important Shrubs of Bedford Park."

*The Bulletin of the Charleston Museum* announces the beginning of a collection to

illustrate the mineralogy of the middle and southern Atlantic states, to be known as the "Piedmont Mineral Collection."

#### BOTANICAL NOTES

It now turns out that the big cactus so common in Arizona, and which is a foot or so thick, and from fifty to sixty feet in height, is not a *Cereus* as had always been supposed. Under this generic name it had been known in books and reports as *C. giganteus*. A recent careful study of this plant by Drs. Britton and Rose has convinced them that its reference to this genus by Engelmann was erroneous, and they find that it is the type of a new and hitherto undescribed genus, which they name *Carnegiea* (*Jour. N. Y. Bot. Gard.*, Nov., 1908). Accordingly this striking cactus is hereafter to be known under the name of *Carnegiea gigantea* (Engelm.) Britt. and Rose.

ANOTHER genus has been segregated from *Cereus*, to which the name *Harrisia* has been given by Dr. Britton (*Bull. Torr. Bot. Club*, Dec., 1908). Three species from Cuba and Jamaica are now referred to this genus, and five new species from Cuba, Porto Rico, Haiti and the Bahamas are added.

A MORPHOLOGICAL paper of much more than ordinary importance recently appeared in the *Transactions of the Connecticut Academy of Arts and Sciences* (Vol. 14, pp. 59 to 170), under the title of "The Morphology of *Ruppia maritima*," by Dr. A. H. Graves. This plant is a slender branching aquatic, grass-like in appearance and belonging to the family *Potamogetonaceae*, which contains other genera and species of "pondweeds." After a morphological and ecological study of the vegetative organs, the reproductive organs are taken up in a most satisfactory manner, followed by a study of embryo, fruit, seed and seedling. Thirty-three text illustrations and fifteen large, full-page plates with 121 figures help to elucidate the descriptions. A bibliography of 98 titles closes the paper. In his closing chapter devoted to a summary of the relationships of *Ruppia* to other Potamogeton-

tonaceae the author finds evidence of reduction from "some form similar to the present submerged *Potamogetons*, with *Zannichellia* and *Althenia* serving as examples of still further reduction."

IN the *Botanische Zeitung* for November 1, 1908, H. Bruchmann's paper, "Das Prothallium von *Lycopodium complanatum* L." adds materially to our knowledge of the gametophyte generation of this species. The tissues of the erect, tuberous gametophyte are shown to consist of a rhizoid-bearing epidermis; a layer containing endophytes; a layer of radially arranged palisade cells, and a large-celled central mass of parenchyma. Branching occurs, giving rise to increased areas for the sexual organs. Some of these prothallia are unisexual and others bisexual. The sexual organs are crowded into dense masses at the summit of the prothallium and are of the usual type of structure.

ALBERT MANN, expert in charge of special barley investigations in the Bureau of Plant Industry of the U. S. Department of Agriculture, makes a preliminary report of the results of his study of the problems of how to recognize the best grades of barley (Circular No. 16, issued November 25, 1908) in which he finds that "the diastatic and cytatic starch ferments are wholly the product of the scutellum and are secreted by its outer layer," and that there is so little of these ferments found in the starch cells that "it is practically negligible." Furthermore, "the aleuron layer has nothing whatever to do with this process," namely, the change of starch into a soluble form for absorption by the embryo, which is identical with what takes place in "malting." Hence the scutellum is the "malting organ," and that barley is best for malting purposes that contains the largest scutellum in the grain.

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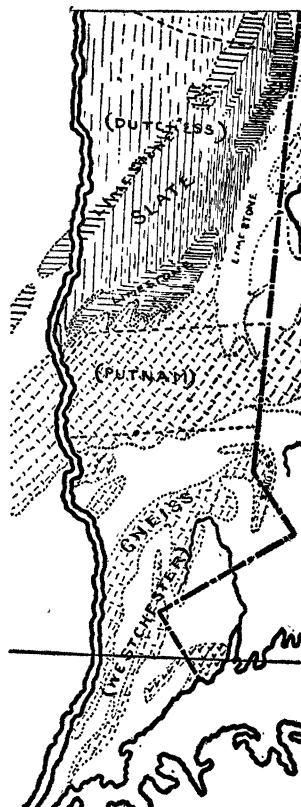
THE UNIVERSITY OF NEBRASKA

#### SPECIAL ARTICLES

##### SOME GEOLOGICAL PROBLEMS

AMONG the larger problems in the geology of eastern North America which to-day claim

attention are: the determination of the eastward and southeastward extension in their metamorphosed condition of the less altered rocks of the Hudson Valley and the satisfactory separation from these of the pre-Cambrian; as well as the separation and correlation of the divisions of the latter, if such exist.



J. D. Dana early essayed to show the continuity of the limestones and schists of the New York-Connecticut border with those of Westchester County, New York. F. J. H. Merrill took up the question later and reached practically the same conclusions. The work of Cook in New Jersey had shown how intimately the lower Paleozoics are involved in the Highlands of that state. Many of the facts seemed to point to a oneness in age of much of this limestone, schist and slate with the unaltered rocks to the north and west in the Hudson Valley and on the flanks of the Highlands.